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Timothy G. Mitchell
Director,
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1CAN070401

July 12, 2004

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: 60-Day Report for ANO-1 Reactor Pressure Vessel Head Inspection for Refueling Outage 1R18
Arkansas Nuclear One, Unit 1 (ANO-1)
Docket No. 50-313
License No. DPR-51

REFERENCES:

1. NRC letter dated February 11, 2003, *Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors, EA-03-009* (0CNA020302)

2. NRC letter dated February 20, 2004, *Issuance of First Revised Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors* (0CNA020404)

3. Entergy letter to NRC dated November 19, 2003, *Response to NRC Bulletin 2003-02 Regarding Reactor Vessel Lower Head Nozzle Integrity* (1CAN110301)

4. NRC letter dated April 29, 2004, *Arkansas Nuclear One, Unit 1 (ANO-1) - Relaxation Request "Order Modifying Licenses (Effective Immediately)" (EA-03-009), from U.S. Nuclear Regulatory Commission (NRC) Issued February 11,2003, for the Reactor Pressure Vessel Head Penetration Nozzles* (CNRI-2004-0004)

5. Entergy letter to NRC dated June 29, 2004, Licensee Event Report 50-313/2004-002-00 (1CAN060403)

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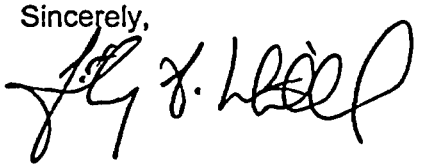
Dear Sir or Madam:

On February 11, 2003, the Nuclear Regulatory Commission (NRC) issued an Order addressing inspection requirements for reactor pressure vessel (RPV) heads at pressurized water reactors (Reference 1) and Revision 1 of the Order was issued on February 20, 2004 (Reference 2). The NRC stated that the actions in the Order are interim measures, necessary to ensure that licensees implement and maintain appropriate measures to inspect and, as necessary, repair RPV heads and associated penetration nozzles. In addition, Entergy committed to perform a 100% visual inspection of the bottom mounted instrument (BMI) penetrations per Reference 3 and the results are being provided in this report. The NRC granted a relaxation of the Order requirements in Reference 4.

Section IV.E of the Order requires licensees to submit a report detailing the inspection results within sixty (60) days after returning the plant to operation. ANO-1 resumed operation from the 1R18 refueling outage on May 13, 2004. The attachment to this letter provides the details of the recent ANO-1 reactor vessel head and BMI penetration inspections. In summary, Entergy did not identify any boric acid leakage from the reactor vessel head or the BMI penetrations. One control rod drive mechanism nozzle was identified by volumetric examination to have two axial indications. The nozzle was repaired prior to heating up from the outage.

This letter does not contain any commitments. If you have any questions or require additional information, please contact Steve Bennett at 479-858-4626.

Sincerely,



TGM/sab

Attachment:

60-Day Response to Order EA-03-009 on ANO-1 RPV Head Inspection for Refueling Outage 1R18

cc: Mr. Bruce S. Mallett
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U. S. Nuclear Regulatory Commission
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NRC Senior Resident Inspector
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U. S. Nuclear Regulatory Commission
Attn: Mr. Tom Alexion
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Mr. Bernard R. Bevill
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Arkansas Department of Health
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Attachment to

1CAN070401

60-Day Response to Order EA-03-009 on ANO-1 RPV Head Inspection For Refueling Outage 1R18

60-Day RV Head Inspection for ANO-1 Refueling Outage 1R18

Arkansas Nuclear One, Unit 1 (ANO-1) is a B&W designed unit with Alloy 600 reactor pressure vessel (RPV) head penetrations which are subject to NRC Order EA-03-009 (References 1 and 2). Entergy either complied with the Order or sought relaxation in accordance with the Order where necessary. NRC approval of the 1R18 Order relaxation is documented in Reference 4. Entergy performed inspections of the ANO-1 RPV head during refueling outage 1R18 which was conducted in the Spring of 2004. In accordance with Section IV.E of the Order, licensees are required to submit a report detailing the inspection results within sixty (60) days after returning the plant to operation. The following provides the results of the 1R18 RPV Head and BMI penetration inspections performed on ANO-1.

Inspection	Inspection Method [Requirement]	Extent of Inspection	1R18 Status/ Findings
Visual Inspection of RPV Head	BMV exam inside RPV Service Structure [Order § IV.C(5)(a)]	100% of the RPV head surface (including 360° around each head penetration).	A CRDM nozzle visual inspection was performed and no boric acid was identified that would be indicative of a leaking penetration. The free-span length below the J-weld for CRDM Nozzle 26 was confirmed to meet the Order Relaxation (Reference 4)
CRDM/ RADCAL Nozzles Non Destructive Exams	UT of 61 CRDM/RADCAL nozzles having no known defects [Order § IV.C(5)(b)(i)]	UT exams of the RPV nozzle from 2" above the highest point of the root of the J-weld to the blind zone.	UT exams of CRDM nozzles performed. Nozzle 61 was identified to have two axial indications as reported in Entergy Licensee Event Report dated June 29, 2004 (Reference 5).
	UT of six Areva repaired CRDM nozzles 3, 6, 15, 17, 33, & 56 [Order § IV.C(1), Note 3]	UT exams of the weld and at least 1-inch above the weld in the nozzle base material.	UT exams of the six former Areva repaired CRDM nozzles were performed. No recordable indications were identified.
	UT/PT exam of two Westinghouse repaired CRDM nozzles 54 & 68 [Order § IV.C(1), Note 3]	UT exams of the RPV nozzle from 2" above the highest point of the root of the J-weld to the blind zone and a wetted surface exam of weld overlay.	UT exams of the Westinghouse repaired CRDM nozzles and a PT exam of the weld overlay were performed. No indications requiring further repair were identified.
	UT of nozzle Annulus for Leak Path Assessment [Order § IV.C(5)(b)(i)]	Interrogate interference fit in all 69 nozzle annuli above J-weld for leakage path	No leakage paths were identified on any of the nozzles including nozzle 61.

Visual Inspection of BMI Nozzles	Visual Inspection of the 52 BMI nozzles [Bulletin 2003-02]	Inspect 100% of the circumference of each penetration as it enters the RPV bottom head.	A BMI nozzle visual inspection was performed and no boric acid was identified that would be indicative of a leaking penetration.

Visual Inspection Above RPV Head	Visually Inspect above RPV Head for RCS leaks [Order § IV.D]	Visually inspect above the RPV head for potential boric acid leaks from pressure-retaining components.	A boric acid inspection of CRDM flanges above the RPV Head was performed. No RCS leaks were identified from Cycle 18 operations. During initial heatup from the previous 1R17 outage, the RADCAL flange was not properly seated, but was corrected prior to operation. Some residual boric acid from this event was identified during the 1R18 inspection of the RPV head. No wastage was identified.

Legend:

BMV = Bare Metal Visual

CRDM = Control Rod Drive Mechanism

BMI = Bottom Mounted Instrument

PT = Dye Penetrant Examination

UT = Ultrasonic Examination